

REMARKS

Claims 2 through 5, 7 through 10, 12 through 14 and 16 through 18 are now pending in this application. In response to the Office Action, dated April 6, 2004, claims 1, 6, 11 and 15 have been cancelled. Dependent claims 2, 7, 12 and 16 have been amended to place them in independent form including the recitations of their now cancelled respective parent claims 1, 6, 11 and 15. The remaining claims accordingly have been amended solely to change their dependencies. Care has been taken to avoid the introduction of new matter.

Claims were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. patent 6,252,692 (Roberts) in view of U.S. patent 5,550,667 (Krimmel). The rejection is presented in considerable detail at pages 2 through 7 of the Office Action. Differences between the teachings of Roberts and the claimed invention have been recognized and addressed. It is submitted that identification of the Encoder 1522 of Roberts as corresponding to the claimed modulation signal source is incorrect. Rather, the dither amplitude control arrangement 1550 provides a modulation signal. Other differences between the applied references and the claimed invention are discussed below. Favorable reconsideration and withdrawal of the rejection in light of the following comments are respectfully solicited.

Each of now independent claims 2, 7, 12 and 16 requires, *inter alia*, an optical amplifier for amplifying the light from the semiconductor laser source. The semiconductor laser source has been recited to be driven by modulation signals outputted from a modulation signal source to output laser light according to the modulation signals. The claimed optical amplifier thus is a booster amplifier that is applied to the laser light output by the laser source. In contrast, the optical amplifier of Roberts, depicted in Fig. 2, is directed to an in-line amplifier (see column 6, line 67 through column 7, line 3).

Optical characteristics of a booster amplifier, such as required by the claims, are significantly different from those of Roberts' in-line optical amplifier, evidence thereof presented in the documents identified as D1 and D2 submitted herewith. Document D1 is entitled "Fiber-Optic Communication Systems (term 6.1.4, Fig. 6.3);," Japanese language document D2, entitled "Optical Amplifier and Application Thereof," is particularly relevant at Table 2-1, an English translation thereof being enclosed. As can be seen from these documents D1 and D2, there are at least three application fields of optical amplifier, and optical characteristics to be required are different for each application field. A position where a particular optical amplifier is intended determines the characteristics of the amplifier; an in-line amplifier cannot readily be changed to another location to satisfactorily perform booster amplifier functionality.

In addition, as Roberts is directed to an in-line amplifier, not a booster amplifier, adjustment of modulation depth according to Roberts would be made in accordance with the specific use of the Roberts amplifier. The claimed requirement for a modulation depth that is a ratio between the modulation depths of laser light at the input and the output ends of the claimed optical amplifier (booster amplifier) does not amount to a matter of merely adjusting the modulation depth of Roberts. Since the Roberts' optical amplifier is not a booster amplifier, it is submitted that there is nothing in the prior art disclosure that would have led a person of ordinary skill in the art to adjust to a ratio at 60% or less. It cannot be said that Roberts teaches general conditions because Roberts does not teach a booster amplifier. In other words, the claimed invention would not have been achieved even if optimum or workable ranges are discovered for the Roberts in-line amplifier.

Krimmel teaches an optical transmitter having an optical amplifier 9 therein, which is a booster amplifier different from the in-line amplifier of Roberts. It is submitted that it would not have been obvious to a person of ordinary skill in the art to substitute (or combine) the Krimmel amplifier into the Roberts arrangement because the optical characteristics of Krimmel's amplifier is different from those of Roberts' amplifier.

Accordingly, it is submitted that claims 2 through 5, 7 through 10, 12 through 14 and 16 through 18 are patentably distinguishable from the prior art. Allowance of the application is respectfully solicited. To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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